



## SPECIFICATION

### Indicator of Mechanical Stress (IMS) (ARM1001)

#### 1. Scope

This specification describes the requirements for an Indicator of Mechanical Stress (IMS) for testing of ferritic metals (hereafter referred to as the “Equipment”), which is to be used at the Armenian Nuclear Power Plant CJSC (hereinafter referred to as the “End-User”).

#### 2. Requirements

##### 2.1. Functional and Performance Requirements

The Equipment shall meet the following functional and performance requirements:

- 2.1.1. Electromagnetic magneto-anisotropic indication of mechanical stress.
- 2.1.2. Determination and monitoring abnormality of mechanical stress distribution in metal.
- 2.1.3. Operate under the temperature at least ranging from 0 °C to +35 °C
- 2.1.4. Protection class of the housing: IP54 or more
- 2.1.5. Portable, operates by batteries
- 2.1.6. Non-volatile memory of minimum 50,000 measurements.
- 2.1.7. Operates manually.

##### 2.2. Technical Requirements

The Equipment shall meet the following technical requirements:

- 2.2.1. Detection of mechanical stress concentrations areas and gradients
- 2.2.2. Depth of effective detection: up to 10-12 mm of ferromagnetic steel or equivalent metals.
- 2.2.3. Three-dimensional and two-dimensional layer-by-layer (at least 2 layers; surface layer and deeper layer).
- 2.2.4. Visualization of field of mechanical stress of the object under testing
- 2.2.5. Transfer of the collected data to computer for storage, results evaluation and reporting.

#### 3. Marking

The Equipment shall have all safety markings in English language.



#### 4. Packing

The Equipment, for the shipment by air to the End-User, shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

#### 5. Quality Requirements

The Equipment shall be manufactured in accordance with the Contractor's ISO quality assurance system ISO 9000 or equivalent company's quality control system. The Contractor shall document the compliance with this quality assurance system.

#### 6. Testing and Acceptance

Prior to shipping, the Equipment shall be tested for conformance with the manufacturer's performance/functional specifications and the minimum requirements specified herein. Certificate of compliance shall be included with the Equipment. The results of the testing of the System shall be documented by the Contractor and included with the Equipment as part of the Deliverable Data Items.

#### 7. Deliverable Data Items

The Contractor shall provide one (1) complete set of operation manual in the English or Russian language.

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